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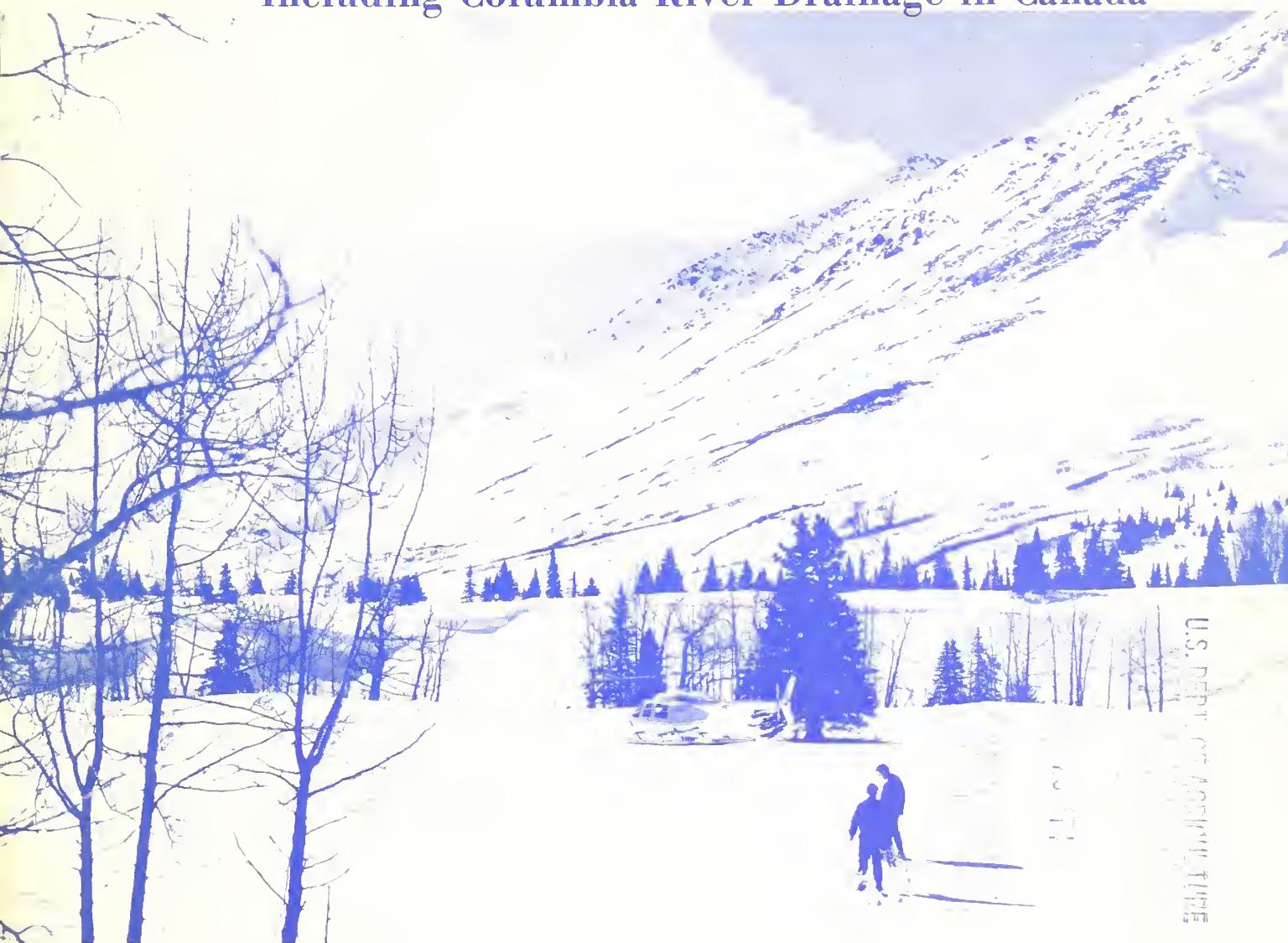
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# **WATER SUPPLY OUTLOOK FOR WESTERN UNITED STATES**

**Including Columbia River Drainage in Canada**



U.S. DEPT. OF AGRICULTURE

**U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Collaborating with  
**CALIFORNIA DEPARTMENT of WATER RESOURCES**  
and  
**BRITISH COLUMBIA DEPARTMENT of  
LANDS, FORESTS and WATER RESOURCES**

AS OF  
**MAR. 1, 1974**

## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Snow Surveyors near Ship Creek,  
Alaska snow course.*

PHOTO BY A. L. TOLSON

## PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

## PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia.



# **WATER SUPPLY OUTLOOK FOR WESTERN UNITED STATES**

## **Including Columbia River Drainage in Canada**

ISSUED

MARCH 1, 1974

The Soil Conservation Service coordinates snow surveys conducted by its staff and many cooperators, including the Bureau of Reclamation, Corps of Engineers, Forest Service, National Park Service, NOAA, National Weather Service, Geological Survey, and other Federal Agencies, Departments of State Government, Irrigation Districts, Power Companies, and others.

The Department of Water Resources coordinates snow surveys in California.

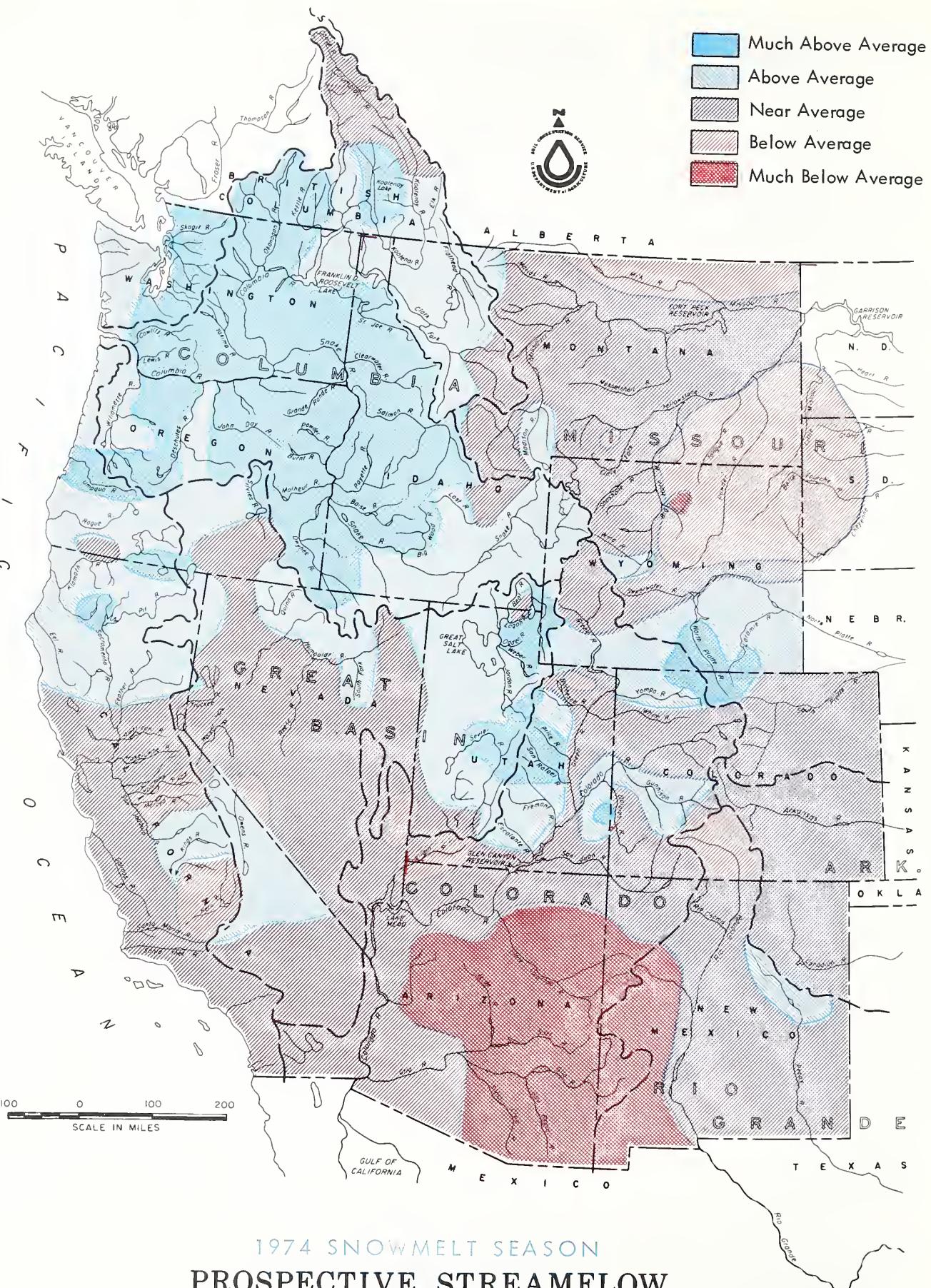
The Water Resources Service, Department of Lands, Forests, and Water Resources directs snow surveys in British Columbia.

This report was prepared by the Water Supply Forecasting Unit, Engineering Division, Soil Conservation Service, from data supplied by Snow Survey Supervisors of the Soil Conservation Service in the States of Alaska, Arizona, Colorado and New Mexico, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Data from California was supplied by the Chief, Water Supply Forecast and Snow Survey Unit, Department of Water Resources.

Data from British Columbia was supplied by the Chief, Hydrology Division, Water Investigations Branch, Department of Lands, Forests and Water Resources.

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
KENNETH E. GRANT, ADMINISTRATOR



1974 SNOWMELT SEASON  
**PROSPECTIVE STREAMFLOW**  
AS OF MARCH 1, 1974

# WATER SUPPLY OUTLOOK

1974 SNOWMELT SEASON  
MARCH 1, 1974

WESTERN SNOWPACKS RANGE FROM A HALF OF USUAL AMOUNTS ON ARIZONA'S SALT RIVER, TO OVER TWICE AVERAGE IN PARTS OF OREGON AND WASHINGTON. GENERALLY EXCELLENT RESERVOIR STORAGE WATER SUPPLEMENTS STREAMFLOW PROSPECTS TO PROVIDE AN ADEQUATE TO EXCELLENT WATER SUPPLY OUTLOOK FOR MOST IRRIGATED AREAS. HIGH WATER POTENTIAL EXISTS ON MANY STREAMS OF THE COLUMBIA BASIN AND IN SMALLER AREAS OF NORTHERN CALIFORNIA, UTAH AND WYOMING. MINOR IRRIGATION SHORTAGES POSSIBLE IN SMALL AREAS OF ARIZONA, NEW MEXICO, WYOMING, AND MONTANA.

Mountain snowfall during February was well above average in most of the Columbia Basin, much below average across the southern part of the western states, and near or below average in most other western areas.

The Columbia Basin snowpack now ranks among the highest two or three years of record, with most watersheds holding from a third more to over twice their usual amounts. Although current runoff prospects are for less water than was measured in 1972, if above normal precipitation continues thru spring months, runoff could reach or even exceed those of 1972.

Most streams in the Columbia Basin are forecast to yield from 20 to 50 percent above average amounts, with a few expected to run as high as 60 to 70 percent above.

The British Columbia Water Resources Service, Department of Lands, Forests and Water Resources reports that while snowpacks in the Columbia, Kootenay and Similkameen rivers are less than those of 1972, most snow measurements on the Okanagan River surpassed the 1972 readings.

In the Missouri Basin the snow is near or above average in most areas. Most streams will yield near to about 15 percent above average amounts. Principal exceptions are on the North Platte River and on streams draining from the Big Horn Mountains and the Black Hills. In the Big Horn - Black Hills area, streams are forecast to flow at near 15 to 40 percent below average amounts. In contrast, the North Platte and Laramie rivers should yield near 50 to 60 percent above average amounts.

Near normal runoff is expected from the South Platte and Arkansas rivers in Colorado, the Canadian and Rio Grande in New Mexico.

The California Department of Water Resources reports that most of the State has received far below normal precipitation during February and some deterioration in water supply potentials

has resulted. March 1 snow surveys show little gain in water content and the pack is now about average. Forecasts of April through July runoff range from 75 to 90 percent of normal in the San Joaquin Valley and 90 to 120 percent in the Sacramento Valley, down substantially from the forecasts made a month ago. Reservoir storage remains near or above average. Current watershed conditions show that no serious water supply deficiencies are evident at this time.

In the Upper Colorado River Basin snow cover averages near 8 percent above normal. With inflow to Lake Powell for the April-July period forecast at 110 percent, prospects for water and power interests in the Lower Basin continue good.

In Arizona, although stream forecasts range from one-fourth to one-half of average, adequate water supplies are predicted for all areas served by reservoir storage. Areas dependent on direct stream diversions can expect water shortages. Salt River Project reservoirs hold 21 percent above average storage.

Reservoir storage in the Great Basin is excellent. Combined with streamflow prospects which range from about 10 percent below to near three-fourths above average amounts, a very good water season is in prospect.

## MISSOURI BASIN

Snowpack along the Continental Divide in western Montana and on the Madison and Ruby drainages is near 20 percent above average, increasing to 30 percent above in the Tobacco Root Mountains. Remaining tributary watersheds draining into the main Missouri River in Montana, excluding the Yellowstone, have a slightly above average snowpack. The snow is near or slightly below average at lower elevations, but average or above average at the higher elevations.

SUMMARY OF SNOW WATER EQUIVALENT MEASUREMENTS

MARCH 1, 1974

MAJOR BASIN AND SUB-WATERSHED	WATER EQUIVALENT IN PERCENT OF: LAST YEAR	AVERAGE	MAJOR BASIN AND SUB-WATERSHED	WATER EQUIVALENT IN PERCENT OF: LAST YEAR	AVERAGE
MISSOURI BASIN			SNAKE BASIN		
Jefferson	169	113	Snake above Jackson, Wyo.	147	117
Madison	142	109	Snake above Hiese, Idaho	149	114
Gallatin	129	87	Snake abv. American Falls Res.	145	116
Missouri Main Stem	192	109	Henry's Fork	148	120
Yellowstone	142	100	Southern Idaho Tributaries	136	130
Shoshone	145	123	Big and Little Wood	161	125
Wind	132	100	Boise	178	140
North Platte	126	115	Owyhee	160	155
South Platte	120	106	Payette	162	130
ARKANSAS BASIN			Malheur	170	145
Arkansas	125	112	Weiser	178	150
Cucharas-Purgatoire	135	146	Burnt	225	155
RIO GRANDE BASIN			Powder	195	150
Rio Grande (Colo.)	73	96	Salmon	189	138
Rio Grande (New Mexico)	89	123	Grande Ronde	355	170
Pecos	83	145	Clearwater	223	135
COLORADO BASIN			LOWER COLUMBIA BASIN		
Green (Wyo.)	147	101	Yakima	302	157
Yampa - White	127	113	Umatilla	470	220
Duchesne	88	91	John Day	205	140
Price	114	131	Deschutes - Crooked	220	140
Upper Colorado	128	114	Hood	445	200
Gunnison	96	108	Willamette	300	165
San Juan	76	101	Lewis	375	138
Dolores	90	115	Cowlitz	396	143
Virgin	58	114	PACIFIC COASTAL BASIN		
Gila	27	50	Puget Sound	269	155
Salt	41	85	Olympic Peninsula	247	158
GREAT BASIN			Umpqua - Rogue	235	155
Bear	144	115	Klamath	200	130
Logan	166	114	Trinity	90	125
Ogden	101	131	CALIFORNIA CENTRAL VALLEY		
Weber	114	115	Upper Sacramento	115	130
Provo - Utah Lake	97	119	Feather	70	100
Jordan	123	126	Yuba	75	100
Sevier	69	102	American	80	100
Walker - Carson	88	108	Mokelumne	75	95
Tahoe - Truckee	79	100	Stanislaus	75	95
Humboldt	93	120	Tuolumne	75	95
Lake Co. (Oregon)	115	90	Merced	65	90
Harney Basin (Oregon)	115	110	San Joaquin	70	90
UPPER COLUMBIA BASIN			Kings	60	100
Columbia (Canada)	153	122	Kaweah	55	90
Kootenai (USA & Canada)	173	128	Tule	40	70
Clark Fork	198	122	Kern	60	90
Bitterroot	184	130	Owens	70	100
Flathead	180	129	Data for California Watersheds supplied by Dept. of Water Resources, and for British Columbia Watersheds by Dept. of Lands, Forests and Water Resources.		
Spokane	293	158	Average is for 1958-72 period. California averages are for the period 1931-70. Based on Selected Snow Courses determined by Distribution within the Basin, Length of Record and Repetitive Monthly Measurement Schedules.		
Okanogan	209	143			
Methow	226	158			
Chelan	186	145			
Wenatchee	287	142			

On the Yellowstone River in Montana, the snowpack is near or below average. It ranges from near average in headwater areas to below average on the lower reaches of the Shields, Boulder, Stillwater and Bighorn rivers. Snow is 30 to 40 percent below average in sections of the Beartooth Mountains and on the Little Bighorn River.

Streamflow forecasts for both the Missouri and Yellowstone rivers and nearly all major tributaries are for near or slightly above average runoff. Water supply reservoirs should recover from last year's low levels and refill this year. Below average runoff is expected from the Beartooth Mountains and from streams draining into southeastern Montana from Wyoming in the region of the Big Horn Mountains and Black Hills.

In Wyoming, except for the Big Horn Mountains and Black Hills, snow cover ranges from about average to near a fourth above average.

Flow of Wyoming streams draining from the west side of the Big Horn Mountains is expected to range between 58 and 81 percent of average. Flow of the Tongue and Powder rivers should be near 15 to 20 percent below average. Prospects are more favorable elsewhere, with forecasts for the Shoshone, Clarks Fork, Wind and Bighorn rivers ranging from average to 16 percent above average.

Highest flows in the Missouri Basin this year are anticipated to come from the North Platte headwaters. Flow at Saratoga, Wyoming should be near 160 percent of average, while the Laramie is forecast at 155 percent near Woods Landing. The South Platte and its tributaries should yield near 5 to 10 percent more than usual amounts.

With few exceptions, reservoir storage in Colorado and Wyoming is very favorable, but below average in Montana. However, runoff this year should be sufficient to refill most of these reservoirs to a normal condition.

## ARKANSAS BASIN

Although snowfall during February was below normal, the snowpack is still greater than is usually measured on the first of March. Percentagewise, snow cover is heaviest on southern tributaries. This, however, is somewhat offset by mountain soil moisture conditions which are only fair.

Assuming normal snowfall and spring rains during the remainder of the season, the Arkansas River at Salida is expected to yield about 5 percent more than the normal flow. Outlook for the Cucharas is slightly better at 10 percent above normal, while on the Purgatoire it is just normal. Flow of the Canadian

River should also be near the usual amount.

Storage in John Martin Reservoir is only 27 percent of average, but is 120 percent in Turquoise. In New Mexico on the Canadian River, storage in Conchas Reservoir is 6 percent below average.

Valley soil moisture is reported to be good.

## RIO GRANDE BASIN

Dry February weather reduced last month's very favorable snowpack conditions until it is now several percent below average on the upper Rio Grande in Colorado. However, it still remains 23 percent above average on the New Mexico tributaries. On the Pecos River headwaters it is still 45 percent above average.

Flow of the Rio Grande near Del Norte, Colorado is expected to be 15 percent less than usual. Inflow to the river system from the Conejos is now expected to be essentially average, while prospects from the Chama River are set at 9 percent above average. Streamflow on the Rio Grande at Otowi Bridge is forecast to be average. The more favorable snow cover on the Pecos River indicates streamflow at Pecos will be a third above average.

The effect of last year's high runoff is reflected in this year's excellent carryover storage. Elephant Butte Reservoir now holds twice its average amount, while all reservoirs have good carryover supplies. Valley soil moisture conditions are poor.

## COLORADO BASIN

Although February snowfall on the watersheds of the upper Colorado Basin was considerably less than usual, the snowpack still remains about 8 percent above average. However, the pack varies from a low of 91 percent on the Duchesne River to a high of 131 percent on the Price River, both streams being in Utah. The snow is average on the upper Green River in Wyoming and on the San Juan River in Colorado-New Mexico. It is about 10 to 15 percent more than usual on the following streams in Colorado: Yampa, White, upper Colorado, Gunnison and Dolores rivers. An isolated pocket of heavy snow lies on the LaSal Mountains near Moab, Utah. Here snow cover is 156 percent of average.

Water supplies in the upper Basin are expected to be adequate to good this summer, unless dry weather persists for the balance of the season. Lowest runoff, percentage-wise, is currently expected from Utah's

## SELECTED STREAMFLOW FORECASTS

MARCH 1, 1974

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
<b>SASKATCHEWAN</b>				
St. Mary near Babb, Montana 1/	500	114	April-Sept.	
<b>UPPER MISSOURI</b>				
Beaverhead near Grant, Montana 2/	145	96	April-Sept.	133
Big Hole near Melrose, Montana	790	106	April-Sept.	
Jefferson at Silver Star, Montana	980	101	April-Sept.	
Madison near Grayling, Montana 3/	535	111	April-Sept.	
Gallatin near Gateway, Montana	520	98	April-Sept.	
Sun at Gibson Dam, Montana 4/	630	107	April-Sept.	285
Belt near Monarch, Montana	115	93	April-Sept.	
Marias near Shelby, Montana 5/	615	110	April-Sept.	
Missouri near Landusky, Montana 6/	4,950	104	April-Sept.	
near Williston, North Dakota 7/	11,900	101	April-Sept.	
S. Fk. Musselshell above Martinsdale, Montana	46	92	April-Sept.	
Milk at Eastern Crossing, Montana	275	96	March-Sept.	
Yellowstone at Yellowstone Lake Outlet, Wyo.	890	102	April-Oct.	623
at Corwin Springs, Montana	2,120	106	April-Sept.	1,485
at Miles City, Montana 8/	6,350	100	April-Sept.	
Clarks Fork near Belfry, Montana	605	100	April-Sept.	
Shoshone below Buffalo Bill Res., Wyo. 9/	827	100	April-Sept.	582
Wind near Dubois, Wyoming	108	106	April-Sept.	72
at Riverton, Wyoming 10/	770	116	April-Sept.	588
below Boysen Res., Wyoming 11/	1,167	116	April-Sept.	1,158
Bull Lake Creek near Lenore, Wyoming	209	115	April-Sept.	185
Little Popo Agie near Lander, Wyoming	51	107	April-Sept.	62
Tensleep near Tensleep, Wyoming	56	71	April-Sept.	
Medicine Lodge near Hyattville, Wyoming	12.4	58	April-Sept.	19.6
Shell Creek near Shell, Wyoming	59	81	April-Sept.	78
Big Horn near St. Xavier 8/	1,850	100	April-Sept.	1,912
Tongue near Dayton, Wyoming	96	85	April-Sept.	122
No. Fork Powder near Hazelton, Wyoming	8.2	82	April-Sept.	8.0
<b>PLATTE</b>				
North Platte at Saratoga, Wyoming	1,000	160	April-Sept.	
Encampment near Encampment, Wyoming	210	149	April-Sept.	159
Laramie & Pioneer Canal, nr Woods, Wyo. 12/	197	155	April-Sept.	179
Big Thompson at Drake, Colorado 13/	115	107	April-Sept.	
Clear at Golden, Colorado 14/	135	107	April-Sept.	
St. Vrain at Lyons, Colorado 15/	78	104	April-Sept.	
Cache La Poudre near Fort Collins, Colorado 16/	260	105	April-Sept.	
<b>ARKANSAS</b>				
Arkansas at Salida, Colorado 17/	325	105	April-Sept.	
Cucharas near LaVeta, Colorado	11	110	April-Sept.	
Purgatoire at Trinidad, Colorado	38	100	April-Sept.	
<b>RIO GRANDE</b>				
Rio Grande near Del Norte, Colorado 18/	400	85	April-Sept.	
at Otowi Bridge, New Mexico 19/	525	100	March-July	
Conejos near Mogote, Colorado 20/	190	103	April-Sept.	
El Vado Res., Inflow, New Mexico	200	109	March-July	
Pecos at Pecos, New Mexico	55	134	March-July	
<b>UPPER COLORADO</b>				
Colorado, Grandby Res. Inflow, Colorado 21/	240	105	April-Sept.	
near Dotsero, Colorado 22/	1,475	103	April-Sept.	
near Cameo, Colorado 23/	2,500	105	April-Sept.	
near Cisco, Utah 24/	3,367	119	April-July	
Lake Powell Inflow, Arizona 25/	7,572	110	April-July	
Roaring Fork at Glenwood Springs, Colorado 26/	750	105	April-Sept.	
Uncompahgre at Colona, Colorado	145	108	April-Sept.	

Forecasts in California provided by Department of Water Resources.  
 Average is for 1958-72 period except California. California is computed for 1921-70 period.  
 Forecasts assume average Effective Climate Conditions from Date Through Snow Melt Season.

Explanatory Notes on Forecasts listed on Inside Back Cover.

## SELECTED STREAMFLOW FORECASTS

MARCH 1, 1974

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
<b>UPPER COLORADO (continued)</b>				
Gunnison, Blue Mesa Res. Inflow, Colorado 27/ near Grand Junction, Colorado 28/	800 1,350	102 114	April-Sept.	
Dolores at Dolores, Colorado	230	100	April-Sept.	
Green at Warren Bridge, Wyoming at Green River, Wyoming 29/ Flaming Gorge Res. Inflow, Utah 27/ at Green River, Utah 30/	328 1,030 1,285 3,058	100 104 109 108	April-Sept. April-Sept. April-July April-July	267 720
Big Sandy near Big Sandy, Wyoming	58	102	April-Sept.	56
Yampa at Steamboat Springs, Colorado near Maybell, Colorado	325 1,100	119 118	April-Sept.	
Little Snake near Dixon, Wyoming	433	144	April-Sept.	
White near Meeker, Colorado	300	102	April-Sept.	
Strawberry at Duchesne, Utah 40/ Duchesne near Tabiona, Utah 31/ at Randlett, Utah 40/	68 103 250	121 99 114	April-July April-July April-July	
Lakefork below Moon Lake, Utah 32/	64	93	April-July	
Uinta near Neola, Utah	70	80	April-July	
Whiterocks near Whiterocks, Utah	47	81	April-July	
Price, Scofield Res. Inflow, Utah 33/	51	150	April-July	46
Cottonwood near Orangeville, Utah 34/	63	137	April-July	60
San Juan, Navajo Res. Inflow, New Mexico 27/ bear Bluff, Utah 35/	600 838	100 98	April-July April-July	
Animas at Durango, Colorado	385	91	April-Sept.	
<b>LOWER COLORADO</b>				
Virgin near Virgin, Utah	40	83	April-June	
Little Colorado above Lyman, Arizona	2.5	26	March-June	51
Gila near Solomon, Arizona	20	22	March-May	466
Frisco at Clifton, Arizona	11	24	March-May	251
Salt at Intake, Arizona	110	49	March-May	1,010
Tonto above Roosevelt, Arizona	8	35	March-May	158
Verde above Horseshoe Dam, Arizona	65	57	March-May	649
<b>GREAT BASIN</b>				
Bear at Utah-Wyo. State Line at Harer, Idaho	136 390	121 144	April-July April-Sept.	104
Smith's Fork near Border, Wyoming	140	121	April-Sept.	86
Thomas Fork near Wyo.-Ida. State Line	44	137	April-Sept.	30
Logan near Logan, Utah 36/	118	104	April-July	90
Ogden, Pine View Res. Inflow, Utah 27/	150	136	April-June	
Weber near Oakley, Utah	112	112	April-June	
Provo near Hailstone, Utah 37/	124	122	April-July	
Strawberry Res. Inflow, Utah	60	133	April-July	
Utah Lake Net Inflow, Utah	265	127	April-July	
Big Cottonwood near Salt Lake City, Utah	41	114	April-July	
Beaver near Beaver, Utah	24	120	April-July	38
Sevier near Hatch, Utah near Gunnison, Utah	40 66	98 169	April-July April-July	78 154
So. Fork Humboldt near Elko, Nevada	93	136	April-July	
Humboldt at Palisades, Nevada	210	108	April-July	
Truckee at Farad, California 38/	285	106	April-July	
East Carson near Gardnerville, Nevada	183	101	April-July	
West Carson at Woodsfords, California	60	115	April-July	
East Walker near Bridgeport, California 39/	76	112	April-August	
West Walker near Coleville, California	155	107	April-July	
Donner und Blitzen near Frenchglen, Oregon	49	89	March-July	
Silvies near Burns, Oregon	148	157	March-July	
Chewaucan near Paisley, Oregon	104	120	March-July	58
Deep above Adel, Oregon	80	103	March-July	
Bidwell near Ft. Bidwell, California	13.5	117	April-July	
Owens, below Long Valley Res., California	73	117	April-July	73

Forecasts in California provided by Department of Water Resources.

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## SELECTED STREAMFLOW FORECASTS

MARCH 1, 1974

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
<b>UPPER COLUMBIA</b>				
Columbia at Birchbank, British Columbia 40/	51,470	111	April-Sept.	34,814
at Grand Coulee, Washington 40/	81,250	118	April-Sept.	45,834
below Rock Island, Washington	89,700	119	April-Sept.	49,262
Kootenai below Libby Dam nr Libby, Montana	8,870	119	April-Sept.	5,252
at Leonia, Idaho	10,800	119	April-Sept.	
Blackfoot near Bonner, Montana	1,050	102	April-Sept.	420
So. Fk. Flathead nr Columbia Falls, Montana 40/	2,650	111	April-Sept.	1,450
Flathead at Columbia Falls, Montana 40/	7,200	112	April-Sept.	4,164
near Polson, Montana 40/	8,800	115	April-Sept.	4,678
Clark Fork above Missoula, Montana	1,930	106	April-Sept.	718
near Plains, Montana 40/	15,000	119	April-Sept.	6,703
at Whitehorse Rapids, Idaho	16,800	117	April-Sept.	
Bitterroot near Darby, Montana	750	128	April-Sept.	301
Priest near Priest River, Idaho 41/	1,150	131	April-July	
Pend Oreille below Box Canyon, Washington	19,500	122	April-Sept.	7,929
Kettle near Laurier, Washington	2,430	130	April-Sept.	1,106
Spokane at Post Falls, Idaho 42/	4,300	144	April-Sept.	
Similkameen near Nighthawk, Washington	2,170	143	April-Sept.	719
Okanogan near Tonasket, Washington	2,570	149	April-Sept.	779
Methow near Pateros, Washington	1,460	142	April-Sept.	
Stehekin at Stehekin, Washington	1,180	131	April-Sept.	
Chelan at Chelan, Washington 43/	1,630	130	April-Sept.	771
Wenatchee at Peshastin, Washington	2,460	138	April-Sept.	1,055
<b>SNAKE</b>				
Snake above Palisades Res., Wyoming 44/	3,240	124	April-Sept.	1,966
near Heise, Idaho 45/	4,500	115	April-Sept.	3,004
near Blackfoot, Idaho 46/	4,780	114	April-July	
at Weiser, Idaho	7,300	112	April-Sept.	
Grey's above Palisade, Wyoming	480	124	April-Sept.	293
Salt above Palisade, Wyoming	415	114	April-Sept.	318
Henry's Fork near Ashton, Idaho 47/	750	112	April-Sept.	
Teton near St. Anthony, Idaho	485	110	April-Sept.	
Big Lost near Mackay, Idaho 48/	200	112	April-Sept.	
Little Lost near Howe	40	98	April-Sept.	
Portneuf at Topaz, Idaho	110	118	March-Sept.	
Salmon Falls Creek nr San Jacinto, Idaho	100	119	March-Sept.	
Little Wood abv High 5 Crk	105	114	April-Sept.	
Big Wood, Inflow to Magic Res., Idaho 49/	405	135	April-Sept.	
Bruneau near Hot Springs, Idaho	250	111	March-Sept.	
Boise near Boise, Idaho 50/	2,120	131	April-Sept.	
Owyhee near Owyhee, Nevada 51/	84	124	April-July	
Owyhee Res. Net Inflow, Oregon 27/	647	150	March-July	341
Malheur near Drewsey, Oregon	142	150	March-July	
Payette near Horseshoe Bend, Idaho 52/	2,700	146	April-Sept.	
Weiser above Crane Creek, Idaho 40/	850	166	March-Sept.	
Burnt near Hereford, Oregon 40/	68	162	March-July	
Powder near Sumpter, Oregon	80	145	April-July	
Eagle above Skull Creek, Oregon	249	142	April-July	
Imnaha at Imnaha, Oregon	444	145	April-Sept.	
Salmon at Whitebird, Idaho	9,050	130	April-Sept.	
Lostine near Lostine, Oregon	154	123	April-Sept.	
Grande Ronde at LaGrande, Oregon	309	160	March-July	90
Clearwater at Spalding, Idaho	11,500	135	April-Sept.	
<b>LOWER COLUMBIA</b>				
Yakima at CleElum, Washington 53/	1,250	130	April-Sept.	
near Parker, Washington 54/	2,600	150	April-Sept.	
Naches near Naches, Washington 55/	1,245	140	April-Sept.	

Forecasts in California provided by Department of Water Resources.

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Forecasts assume average Effective Climate Conditions from Date Through Snow Melt Season.

Explanatory Notes on Forecasts listed on Inside Back Cover.

## SELECTED STREAMFLOW FORECASTS

MARCH 1, 1974

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
<b>LOWER COLUMBIA (continued)</b>				
Walla Walla, So. Fk. near Milton, Oregon	95	120	March-Sept.	
Umatilla at Pendleton, Oregon	290	145	March-Sept.	
John Day, Middle Fork at Ritter, Oregon	193	150	March-July	
North Fork at Monument, Oregon	1,056	164	March-July	
Crooked near Post, Oregon	165	122	March-July	
Deschutes at Benham Falls, Oregon <u>40/</u>	431	120	April-July	
Columbia at The Dalles, Oregon <u>40/</u>	127,400	122	April-Sept.	
at The Dalles, Oregon <u>40/</u>	107,900	120	April-July	65,012
Hood near Tucker Bridge, Oregon <u>40/</u>	386	135	April-July	54,150
McKenzie near Vida, Oregon	1,339	129	April-July	
Santiam, South, at Waterloo, Oregon	693	123	April-July	
North, at Mehama, Oregon <u>40/</u>	932	122	April-July	
Clackamas at Estacada, Oregon	927	138	April-July	
Willamette at Salem, Oregon <u>40/</u>	5,509	125	April-July	
Lewis at Ariel, Washington <u>56/</u>	1,740	130	April-Sept.	773
Cowlitz at Castle Rock, Washington <u>57/</u>	3,550	128	April-Sept.	1,561
<b>NORTH PACIFIC COASTAL</b>				
Dungeness near Sequim, Washington	185	112	April-Sept.	
Umpqua, No., near Toketee Falls, Oregon <u>40/</u>	223	134	April-July	
Rogue at Raygold, Oregon	877	119	April-July	
Klamath Lake, Net Inflow, Oregon	761	120	March-July	406
Trinity at Lewiston, California	840	136	April-July	690
<b>CALIFORNIA CENTRAL VALLEY <u>40/</u></b>				
Sacramento, Inflow to Shasta, California	2,180	123	April-July	1,538
Feather near Oroville, California	2,040	110	April-July	1,913
Yuba at Smartville, California	1,000	93	April-July	1,002
American, Inflow to Folsom Res., Calif.	1,250	95	April-July	1,260
Cosumnes at Michigan Bar, California	160	110	April-July	117
Mokelumne, Inflow to Pardee Res., Calif.	470	101	April-July	520
Stanislaus, Inflow to Melones Res., Calif.	670	93	April-July	738
Tuolumne, Inflow to Don Pedro Res., Calif.	1,040	87	April-July	1,414
Merced, Inflow to Excheque Res., Calif.	480	79	April-July	730
San Joaquin, Inflow to Millerton Lake, Calif.	1,085	91	April-July	1,546
Kings, Inflow to Pine Flat Res., California	1,130	97	April-July	1,660
Kaweah, Inflow to Terminus Res., California	240	89	April-July	451
Tule, Inflow to Success Res., California	45	76	April-July	111
Kern, Inflow to Isabella Res., California	330	79	April-July	724
<b>ALASKA</b>				
Chena at Fairbanks, Alaska	490	85	April-July	541
Salcha near Salchaket, Alaska	670	84	April-July	686
Ship Creek near Anchorage, Alaska	51	88	April-July	40
So. Fk. Campbell Creek near Anchorage, Alaska	11.6	88	April-July	9.7

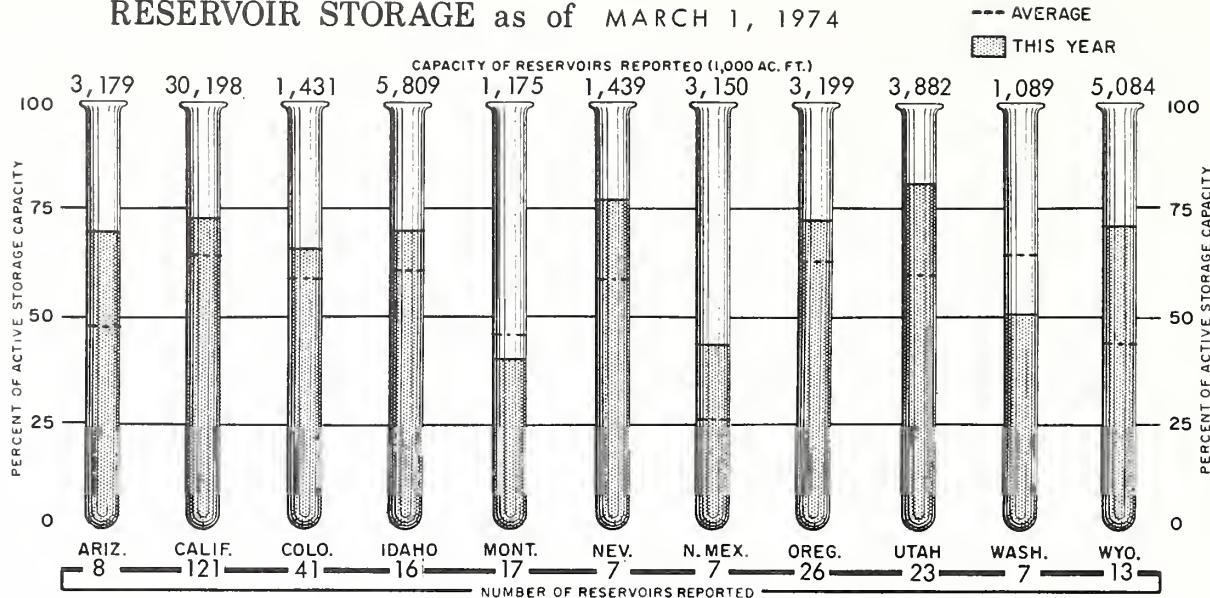
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## RESERVOIR STORAGE as of MARCH 1, 1974



Uinta Basin streams from the Roosevelt to Vernal area. These streams are expected to yield near 20 percent lower than average amounts. High runoff (about a third to over a half more than usual) is expected on the Little Snake near Dixon, Wyoming, from Utah's Price and San Rafael rivers and smaller streams near Moab.

Flow of most Wyoming streams will be about average to 10 percent above average, while most Colorado streams will yield from 10 percent below to 20 percent above average.

Green River contributions to Flaming Gorge and Lake Powell reservoirs should be near 8 or 9 percent above its usual amount, while the Colorado River inflow contribution to Lake Powell is forecast at 19 percent above. Combining this with a near average flow from the San Juan River indicates a total April-July inflow to Lake Powell of approximately 10 percent above average.

Storage in upper Colorado irrigation reservoirs is well above average.

In the lower Colorado Basin the Virgin River near Virgin is forecast at 83 percent. Outlook for the Santa Clara is better, with 17 percent above normal flow anticipated. In Arizona, although stream forecasts range from one-fourth to one-half of average, adequate supplies are predicted for all areas served by reservoir storage. Areas dependent on direct stream diversions can expect to experience water shortages.

Salt River Project reservoirs are 21 percent above average, while San Carlos contains over 3 times its usual storage.

## GREAT BASIN

Most watersheds of the Great Basin have snowpacks which are near or well above average. When considered with the existing excellent reservoir storage, this foreshadows good to excellent water supplies next summer for all areas except a few smaller watersheds in southern Nevada. Even in these smaller areas, direct-flow irrigation supplies should be adequate until late summer.

This year's snowpack generally ranges from a low of 10 percent below average on Mt. Charleston near Las Vegas, Nevada and in Lake County, Oregon to a high of two-thirds more than average on streams near Fillmore, Utah. Snow cover on most Nevada streams ranges from average to 20 percent above. On most Utah streams it ranges from average to a third above the usual amount.

Lowest stream forecast in the Basin is for the Sevier River near Kingston, Utah at 86 percent. Other forecasts which are comparable are Donner und Blitzen near Frenchglen, Oregon at 89 percent and Blacksmith Fork near Hyrum, Utah at 92 percent. Highest forecast is for Utah's Salina Creek at 173 percent. Other Utah streams with forecasts ranging from 140 to 170 percent of average include: Sevier near Gunnison, San Pitch River tributaries, Vernon Creek, Lost Creek near Croydon, South Fork Ogden, Bear River and Randolph Creek near Randolph.

Nevada water users along the Humboldt can anticipate a flow at Palisades of 8 percent above average. Heavier streamflow -- over a third above average -- is expected from the South Fork Humboldt near Elko. On the lower

## SELECTED STREAMFLOW FORECASTS

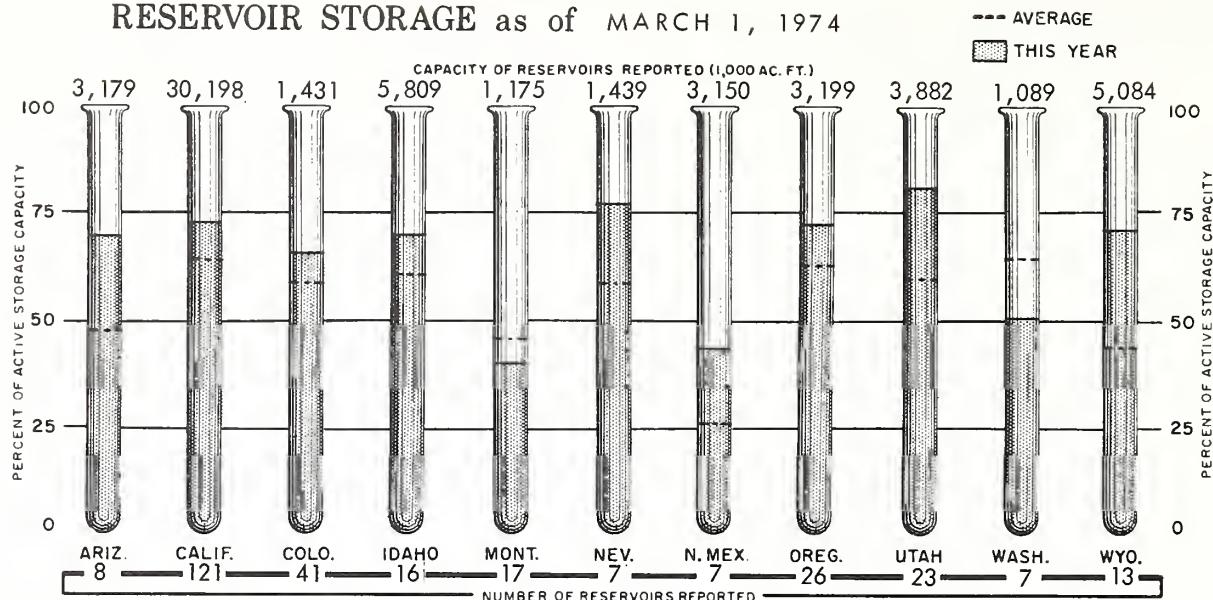
MARCH 1, 1974

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	Flow In (1,000 A.F.)	Percent of Average		
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## STORAGE IN LARGE RESERVOIRS

MARCH 1, 1974

BASIN AND NAME OF RESERVOIR	CAPACITY (1,000 A.F.)	STORAGE (1,000 A.F.)	STORAGE PERCENT AVERAGE	BASIN AND NAME OF RESERVOIR	CAPACITY (1,000 A.F.)	STORAGE (1,000 A.F.)	STORAGE PERCENT AVERAGE
<b>UPPER MISSOURI</b>							
Belle Fourche	185	152	151	Chelan	676	228	97
Boysen	550	404	154	Coeur d'Alene	225	128	79
Buffalo Bill	373	137	91	Duncan	1,347	132	131
Canyon Ferry	2,043	1,576	98	Flathead	1,791	1,221	121
Fort Peck	19,410	15,560	119	Hungry Horse	3,428	2,211	107
Garrison	24,790	18,840	134	Kootenay	673	462	107
Hebgen	377	230	113	Lake Koocanusa	3,522	1,561	---
Keyhole	192	158	209	Lower Arrow	3,083	802	---
Lake Francis Case	5,816	3,832	104	Noxon Rapids	335	301	100
Lake Sharp	1,900	1,750	103	Pend Oreille	1,155	590	129
Oahe	23,630	19,135	124	Roosevelt	5,232	-1,175	---
Tiber	1,347	534	92	Upper Arrow	4,061	990	293
Bighorn	1,356	900	112	<b>LOWER COLUMBIA</b>			
<b>PLATTE</b>							
So. Platte in Colo. (24)	580	451	111	Cougar	155	49	118
City of Denver (5)	507	432	103	Detroit	300	104	94
Colo-Big Thompson (3)	718	602	144	Green Peter	270	114	104
Glendo	784	480	132	Hills Creek	200	76	126
Pathfinder	1,016	962	251	Lookout Point	337	108	111
Seminoe	1,010	641	192	Prineville	153	102	91
<b>ARKANSAS</b>							
<b>SNAKE</b>							
Conchas	273	175	94	American Falls	1,125	1,045	132
John Martin	354	24	27	Anderson Ranch	423	176	74
Turquoise	120	48	120	Arrowrock	287	266	107
<b>RIO GRANDE</b>							
Elephant Butte	2,195	879	200	Brownlee	980	524	116
El Vado	195	127	---	Cascade	653	348	107
<b>UPPER COLORADO</b>							
Blue Mesa	830	360	102	Dworshak	2,016	698	---
Flaming Gorge	3,749	2,968	187	Jackson	847	651	122
Navajo	1,696	985	181	Lucky Peak	278	71	79
Powell	25,002	17,597	209	Owyhee	715	536	119
Starvation	152	125	---	Palisades	1,200	943	117
<b>LOWER COLORADO</b>							
Havasu	619	548	102	Warm Springs	191	84	87
Mead	26,159	19,888	116	<b>PACIFIC COASTAL</b>			
Mohave	1,810	1,627	96	Clair Engle	2,448	2,384	114
Salt River Res. (4)	1,755	1,438	130	Clear Lake	440	299	131
San Carlos	949	591	309	Nacimiento	350	212	109
Verde River Res. (2)	318	75	52	Ross	1,203	1,030	118
<b>GREAT BASIN</b>							
Bear	1,421	1,090	114	Upper Klamath	584	482	114
Deer Creek	150	117	122	<b>CALIFORNIA CENTRAL VALLEY</b>			
Lahontan	291	264	129	Almanor	1,308	1,013	144
Rye Patch	157	124	131	Berryessa	1,602	1,640	103
Sevier Bridge	236	224	224	Bullards Bar	930	736	153
Strawberry	274	213	183	Folsom	1,010	619	103
Tahoe	732	606	137	Isabella	570	202	113
Utah	884	880	146	McClure	1,026	649	120
Willard Bay	193	158	130	Millerton	521	404	113
				Oroville	3,484	2,848	110
				Pine Flat	1,013	691	118
				Shasta	4,500	3,620	107

Reservoir Storage Data Provided by Bureau of Reclamation, Corps of Engineers, Geological Survey, and water using organizations. Data from California and British Columbia provided by Department of Water Resources and Department of Lands, Forests and Water Resources, respectively.

Humboldt, storage in Rye Patch Reservoir is 131 percent of average, assuring a good irrigation season.

Flow of the Sierra-Nevada streams into Nevada is expected to range from near average to 15 percent above. Reservoir storage on these streams is about 30 to 40 percent above average. In the Surprise Valley area of California, forecasts range from 17 to 40 percent above average.

Forecasts for most Utah streams range from 15 to 35 percent above average. Reservoir storage in Utah is 35 percent above average.

Outlook for California's Owens Valley is good, with the Owens River expected to flow at 17 percent over the usual amount.

## COLUMBIA BASIN

Adding to an already well above normal snowpack, snow accumulation during February was also well above normal in most of the Columbia Basin. Exceptions to the general pattern occurred on the upper Clark Fork above Missoula, Montana and on most tributaries of the middle and upper Snake River. In these areas snow accumulation was near or below normal.

The snowpack is particularly heavy along the Cascade Mountains in Oregon and Washington, on British Columbia's Okanagan River, in northern Idaho, eastern Oregon and southeastern Washington. In these areas the snow generally ranges from about 140 to 220 percent of average. At many courses the snow water is 2nd or 3rd high of record for March 1. Most snow courses on the Okanagan River surpass their 1972 readings.

The only watersheds having slightly below average snow (5 to 10 percent low) are the Little Lost River and Camas-Beaver Creek on the upper Snake River in Idaho. The following watersheds have an average to 20 percent above average snowpack: Columbia River above Arrow Lake, upper Clark Fork, Bruneau and Little Wood rivers, and most tributary streams above American Falls Reservoir. Snow on remaining watersheds is 20 to 40 percent above average.

The stream with the lowest runoff prospect this year is the Little Lost River near Howe, Idaho where 2 percent less than average flow is expected. Streams where flow is expected to be average to 10 percent above average are the upper Columbia in Canada, Montana's Blackfoot and upper Clark Fork, and smaller Idaho streams east of the Little Lost River.

Snowmelt runoff is expected to be from 10 to 30 percent above average on the following streams: main Columbia River stations in the U.S.A., Kootenai above Kootenai Lake, Pend Oreille, Clark Fork and tributaries below

Missoula, except as noted above, north side Snake River tributaries above Big Wood River and south side tributaries above the Owyhee River, the Deschutes and the main stem stations on the Willamette River.

Most other streams are forecast to yield about 130 to 150 percent of average amounts. Among these are Cascade mountain streams which are tributary to the main Columbia, Deschutes and Willamette rivers. Also included are streams in central and eastern Oregon, southeastern Washington, and in Idaho from the Spokane River to the Big Wood River.

A few streams are expected to have flows which will be as high as 160 to 170 percent of average. These include Oregon's North Fork of the John Day, Grande Ronde at La Grande, Burnt near Hereford, and Idaho's Weiser River.

Flow of the Columbia River at The Dalles is anticipated to be near 22 percent above the 1958-72 fifteen year average.

The current snow measurements and stream forecasts indicate that this year's runoff will be less than in 1972. However, if spring weather continues abnormally wet and cool until late May or early June, runoff conditions could become more critical than they were in 1972.

## ALASKA

Heavy February snowfall changed snowpack conditions on several of the state's watersheds. Areas of the Alaska Range made the best gains while watersheds in the Brooks Range still have severely deficient packs. Forecasts of snowmelt runoff indicate streams will yield less than average amounts near Anchorage and Fairbanks. Ship and South Campbell creeks are expected to flow at 88 percent of their normal range through the month of July. The Chena and Salcha rivers near Fairbanks should yield near 85 and 84 percent of their averages, respectively.

Basin snowpack ranges from 52 percent of average on the Koyukuk to 115 percent on the Long River Range near Juneau. Elsewhere most watersheds hold from 75 to 90 percent of an average snowpack.

## CALIFORNIA

The California Department of Water Resources, coordinating agency for snow surveys and water supply forecasting in California, reports that some deterioration in water supply potentials has resulted during February because of far below normal precipitation over most of the State during the month. March 1 snow surveys show that the snow accumulation increment normally expected during February was not re-

ceived. With only small accumulations of snow during the past month the March 1 snow water content is now near average, down somewhat from above average conditions which existed on February 1. A general storm, commencing as the month began, may reinforce the snowpack enough to sustain normal conditions through the remainder of the snow season. This storm started in Northern California at the end of February and progressed southward during the first days of March. Snow water content data tapers from 125 percent of average on the North Coast to about 90 percent in southern watersheds.

Precipitation during February was above average on the North Coast. All other areas of the State experienced a dry month. Precipitation averaged about 50 percent of normal over Sacramento Valley watersheds and tapered off to about one-third of normal in San Joaquin Valley watersheds. However, because of heavy rainfall earlier in the season, water year precipitation to date is still above normal in the northern two-thirds of the State for the first five months.

Runoff during February was below average in almost all streams. In the Central Valley it ranged from 46 percent of average on the Tule River in the south to 88 percent for inflow to Shasta Lake. Most streams in the Sacramento

Valley portion produced about 75 percent of the average February runoff. In the San Joaquin Valley, runoff during February totaled about 60 percent of average. Water year runoff since October 1 remains well above average throughout the Central Valley due to large early season flows caused by heavy rainstorms. In other areas of the State, only the South Coastal area runoff has been below normal for the water year.

March 1 forecasts of April through July runoff have been reduced substantially in almost all areas from those made one month ago. March 1 conditions indicate that April through July runoff will range from 76 percent of normal on the Tule River to 136 percent on the Trinity River, the only basin where a slight increase in the forecasted runoff occurred. Forecasts for San Joaquin Valley streams have been reduced as much as 30 percent due to the very dry weather during February.

Reservoir storage remains above average in all areas except the Lahontan side of the Sierra. If normal precipitation is received during the next few months, most major reservoirs are expected to fill this spring and the State Water Project and Central Valley Project should meet all scheduled water delivery commitments.





# EXPLANATION of STREAMFLOW FORECASTS

All flows are observed flows except as adjusted for: 1/ Storage change in Lake Sherburne.  
2/ Storage change in Lima and Clark Canyon reservoirs. 3/ Storage change in Hebgen Lake.  
4/ Storage change in Gibson Reservoir and measured diversions. 5/ Storage change in Two Medicine, Four Horns, Lake Francis and Swift reservoirs. 6/ Storage change in Canyon Ferry and Tiber reservoirs. 7/ Changes as indicated in (6/), (8/), plus storage change in Fort Peck.  
8/ Storage change in Boysen, Buffalo Bill and Yellowtail reservoirs. 9/ Storage change in Buffalo Bill Reservoir plus Heart Mountain diversion. 10/ Storage change in Pilot Butte and Bull Lake reservoirs plus Wyoming canal diversion.

11/ Changes indicated in (10/) plus storage change in Boysen Reservoir. 12/ Plus diversions to Cache LaPoudre. 13/ Plus by-pass to power plants. 14/ Minus diversion thru Gumlick Tunnel. 15/ Storage change in Price Reservoir. 16/ Minus diversions from North Platte, Laramie and Colorado rivers plus measured diversions above station. 17/ Storage change in Clear Creek, Twin Lakes and Turquoise reservoirs minus diversions from Colorado River.  
18/ Storage change in Rio Grande, Santa Maria and Continental reservoirs. 19/ Storage change in El Vado and Abiquiu reservoirs. 20/ Storage change in Platoro Reservoir.

21/ Storage change in Grandby Reservoir as furnished by U.S.B.R. plus diversions by Adams Tunnel and Grand River Ditch. 22/ Changes as indicated in (21/) plus diversions thru Roberts, Gumlick and Moffat tunnels and storage change in Dillon, Homestake, Williams Fork, Green Mountain and Willow Creek reservoirs. 23/ Changes indicated in (22/) and (26/).  
24/ Storage change in Blue Mesa Reservoir. 25/ Changes indicated in (24/), (30/) and (35/) and storage change in Lake Powell. 26/ Diversions to Arkansas River plus storage change in Ruedi Reservoir. 27/ (Inflow record as computed by U. S. Bureau of Reclamation.) 28/ Storage change in Taylor, Blue Mesa and Morrow Point reservoirs. 29/ Storage change in Fontenelle Reservoir. 30/ Storage change in Flaming Gorge Reservoir.

31/ Plus diversion through Duchesne Tunnel. 32/ Storage change in Moon Lake Reservoir.  
33/ Storage change in Scofield Reservoir. 34/ Storage change in Joe's Valley Reservoir.  
35/ Storage change in Navajo Reservoir. 36/ Plus U. P. & L. Co. tailrace and Logan, Hyde Park and Smithfield canals. 37/ Minus diversions thru Duchesne Tunnel and Weber-Provo Canal.  
38/ Storage change in Lake Tahoe and Boca reservoirs (Forecast by Truckee Basin Committee.)  
39/ Storage change in Bridgeport Reservoir. 40/ Corrected for major upstream impairments -- represents simulated natural flow conditions.

41/ Storage change in Priest Lake. 42/ Storage change in Coeur d'Alene Lake and diversions by Spokane Valley Farms Co. and Rathrum Prairie canals. 43/ Storage change in Lake Chelan.  
44/ Storage change in Jackson Lake. 45/ Storage change in Jackson Lake and Palisade reservoirs.  
46/ Storage change in Jackson Lake, Palisades, Island Park, Henry's Lake, Grassy Lake plus diversions between Heise and Blackfoot. 47/ Storage change in Henry's Lake and Island Park reservoirs. 48/ Storage change in MacKay Reservoir and diversion in Sharp Ditch. 49/ Combined flow Big Wood near Bellevue and Camas Creek near Blaine. 50/ Storage change in Arrowrock, Anderson Ranch and Lucky Peak reservoirs.

51/ Storage change in Wild Horse Reservoir. 52/ Storage change in Cascade and Deadwood reservoirs. 53/ Storage change in Keechelus, Kachess and CleElum reservoirs plus diversion by Kittitas Canal. 54/ Changes indicated in (52/) plus storage change in Bumping and Rimrock Lakes plus diversion by Roza, Union Gap, New Reservation, Old Reservation and Sunrise canals.  
55/ Storage change in Bumping and Rimrock lakes and diversions by Tieton, Selah Valley, Wapatox canals and City of Yakima. 56/ Storage change in Merwin, Yale and Swift reservoirs. 57/ Storage change in Mayfield Reservoir.

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